

Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed**1.1. Name of the Data, data collection Project, or data-producing Program:**

Bathymetric ArcRaster Grid of Apalachicola Bay and St. George Sound, Florida (25m)

1.2. Summary description of the data:

These data were collected under a cooperative mapping program between the U.S. Geological Survey (USGS), the National Oceanic and Atmospheric Administration Office for Coastal Management (NOAA\OCM), and the Apalachicola National Estuarine Research Reserve (NERR). The primary objectives of this program were to collect marine geophysical data to develop a suite of seafloor maps to better define the extent of oyster habitats, the overall seafloor geology of the bay and provide updated information for management of this resource. In addition to their value for management of the bay's oyster resources, the maps also provide a geologic framework for scientific research and the public.

High-resolution bathymetry, backscatter intensity, and seismic profile data were collected over 230 square kilometers of the floor of the bay. The study focused on Apalachicola Bay and Western St. George Sound portions of the estuary mostly in depths > 2.0 meters.

Original contact information:

Contact Name: Brian Andrews

Contact Org: U.S. Geological Survey

Title: Geographer

Phone: 508-548-8700 x2348

Email: bandrews@usgs.gov

1.3. Is this a one-time data collection, or an ongoing series of measurements?

One-time data collection

1.4. Actual or planned temporal coverage of the data:

2005-03-14, 2006-05-29, 2005-04-13, 2006-06-27

1.5. Actual or planned geographic coverage of the data:

W: -85.096558, E: -84.753126, N: 29.789051, S: 29.597035

1.6. Type(s) of data:

(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)

Map (digital)

1.7. Data collection method(s):

(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:**1.8.1. If data are from another observing system, please specify:****2. Point of Contact for this Data Management Plan (author or maintainer)****2.1. Name:**

NOAA Office for Coastal Management (NOAA/OCM)

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

NOAA Office for Coastal Management (NOAA/OCM)

2.4. E-mail address:

coastal.info@noaa.gov

2.5. Phone number:

(843) 740-1202

3. Responsible Party for Data Management

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:**3.2. Title:**

Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Process Steps:

- 2006-10-01 00:00:00 - Bathymetric data were corrected for variations in the speed of sound throughout the water column; sound velocity profiles were acquired throughout the survey area using an Applied MicroSystems SVPlus Sound Velocimeter. These data were downloaded and reformatted to the required format needed for use within University of New Brunswick's Ocean Mapping Group (OMG) SwathEd multibeam processing software. The raw Submetrix 2000 Series data were "unraveled" and reformatted into the OMG format. This process creates several files on disk: 1) bathymetric soundings 2) raw sidescan backscatter 3) navigation 4) parameter files describing the configuration of the system (i.e. offsets between motion reference unit and GPS antenna, etc). This process also incorporates the sound velocity profiles in order to properly trace the rays given the structure of the water column.
- 2006-10-01 00:00:00 - The OMG formatted bathymetric data were then graphically edited using the SwathEd multibeam processing software. This step enabled editing on a "ping-by-ping" basis, both in the across- and along-track dimension. Spurious or erroneous data were removed. The navigation data were also graphically examined for each line of data.
- 2006-10-01 00:00:00 - Soundings were corrected to mean lower low water (MLLW) using high-resolution Real-Time Kinematic Global Positioning System (RTKGPS) measurements. The one second RTK data were smoothed in MatLab using a 3rd order polynomial and then merged with each line file in SwathEd.
- 2006-10-01 00:00:00 - Soundings data were gridded using the weigh_grid routines from SwathEd. Soundings were corrected to mean lower low water during the weigh_grid operation using the real time kinematic differential global positioning navigation files. The final weigh_grid parameters used were: weigh_grid -omg -coeffs -butter -lambda 5 -cutoff 20 Max_incidence angle was not used on most lines to allow usage of bathymetry data points from a broader section of the swath. Only lines from rough days, when the vessel heave was large, were gridded with a small incidence angle to maximize the good data from adjacent lanes and reduce the noisy data.
- 2006-10-01 00:00:00 - Final soundings were gridded to a 5m grid cell resolution

using SwathEd weigh_grid command and the following gridding parameters:

weigh_grid -omg -coeffs -butter -power 2 -lambda 1 -cutoff 4 -max_incidence 60 A 5m grid cell size reduced the number of points and a max_incidence of 60 degrees was used to remove the outer soundings which tended to be noisy.

- 2006-10-01 00:00:00 - The final grid in SwathEd OMG format was imported directly into IVS DMagic software producing a .geo, .dtm, and .shade file. The dtm file was exported to an x,y,z comma delimited file.

- 2006-10-01 00:00:00 - The comma-delimited x,y,z file of bathymetry was added to ArcMap as an event theme and converted to a point feature class. Two separate x,y,z files and feature classes were processed; one for Apalachicola Bay, and one for St. George Sound.

- 2006-10-01 00:00:00 - The remaining geoprocessing steps were completed using one model developed in ArcGIS Modelbuilder. The Model is included in the geodatabase distributed with the Open-File Report. Each of the processing steps used to Create the Model for St. George Sound are described below. The same processing steps were used to create a second Model for Apalachicola Bay using the same steps. Created empty TIN and added the x,y,z points using the geoprocessing history below: Create TIN *Date: 20061027 *Time: 113410 *Tool location: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\3D Analyst Tools.tbx\CreateTin * Command issued: CreateTin D:\GIS\FL\rafa06001\ArcGIS\Bathy\BathInterp\Tin\StGTin "PROJCS['WGS_1984_UTM_Zone_16N',GEOGCS['GCS_WGS_1984',DATUM['D_WGS_1984',SPHEROID['WGS_1984',6378137.0,298.257223563]],PRIMEM['Greenwich',0.0],UNIT['Degree',0.0174532925199433]],PROJECTION['Transverse_Mercator'],PARAMETER['False_Easting',500000.0],PARAMETER['False_Northing',0.0],PARAMETER['Central_Meridian',-87.0],PARAMETER['Scale_Factor',0.9996],PARAMETER['Latitude_Of_Origin',0.0],UNIT['Meter',1.0]];-10000 -10000 100000;0 100000;0 100000"

- 2006-10-01 00:00:00 - Added 5m xyz points to TIN See geoprocessing history below: Process: *Process name: Edit TIN *Date: 20061027 *Time: 113535 *Tool location: C:\Program Files\ArcGIS\ArcToolbox\Toolboxes\3D Analyst Tools.tbx\EditTin * Command issued: EditTin D:\GIS\FL\rafa06001\ArcGIS\Bathy\BathInterp\Tin\stgtin " StG_5mc_xyz depth masspoints false;BathClip <None> <None> hardclip false" D:\GIS\FL\rafa06001\ArcGIS\Bathy\BathInterp\Tin\stgtin

- 2007-01-01 00:00:00 - Converted Tin to Raster using Natural Neighbors using floating point and natural neighbors options. Cells size was set at 25m.

- 2007-01-01 00:00:00 - Output Raster was clipped to a polygon boundary delineating the extent of bathymetric data.

- 2007-01-01 00:00:00 - The clipped 25m bathymetric grid was smoothed with a 3x3 low-pass filter.

- 2007-01-01 00:00:00 - Individual 25m smoothed grids of Apalachicola Bay and St. George Sound were merged together to make one grid for both areas.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other

plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:

- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:

<https://www.fisheries.noaa.gov/inport/item/47876>

6.4. Process for producing and maintaining metadata

(describe or provide URL of description):

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:

NOAA Office for Coastal Management (NOAA/OCM)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:

ftp://ftp.coast.noaa.gov/pub/benthic/Shallow_Water_Bathymetry/FL_ApalachicolaBay_bath.zip
<http://pubs.usgs.gov/of/2006/1381/GIS/raster/bath/apbaybath25m.zip>

7.3. Data access methods or services offered:

Data can be downloaded via the World Wide Web (WWW);

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):

Office for Coastal Management - Charleston, SC

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.